A Study of the Characteristics of University of Entrepreneur using Structural Equation Modeling

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Abstract

The rapidly changing environmental conditions, and has created new challenges for higher education. University of academic entrepreneur who not only meet the needs and expectations of their environment is diverse, rather, its programs and operational processes to promote a culture of entrepreneurship and education of entrepreneurs. The goal of the study was to investigate and explain the characteristics of University of entrepreneur; empirical evidence in Mazandaran University is using structural equations. The population of 800 members, 160 professors and experts in education and research, for example, the researcher made questionnaire was answered with a reliability coefficient of 0.94. The software SPSS for statistical analysis and goodness of fit tests and structural equation modeling was used LISREL software. The results have shown. The structural equation model was designed to explain the features of University of the third generation in Mazandaran University reflect the expectation is a good fit. And can say this conceptual model, the community has been applied correctly. Variable associated with the variable as the most effective and low-impact infrastructure as the variables are known. In other words, the rise of a single variable with regard to the characteristics Entrepreneur University of Mazandaran it features a 0.49-unit increase in the variable and services will increase.

Keywords: modeling, structural equation entrepreneurial university.
1. Introduction

When knowledge of society and human life that can be used in practice. Knowledge that is not used, a source is inefficient (Yadollahi, 2010). The Prophet (PBUH) also has knowledge of procedure calls, if you remain practical and migration (the hadith of the Prophet). There is a gap between knowing and doing can lead wisdom to create value. Knowledge is not used, the growth and development does not. To reduce the knowledge gap - doing the job creation requirement. Entrepreneurs with innovative, practical knowledge may be used. As producers University knowledge, not only must be used to think about it, but the first practical applications of knowledge-based society requires the setting (Yadollahi, 2010). One of the roles and specific impacts on their environment in a university or University of the third generation University entrepreneur crystallized. Attention to the needs of the University community and interactive communications triple government is industry and academia has been achieved. According to Zhou and Etzkowitz, entrepreneur University the concept and its features: 1. entrepreneurship education, educational organization meeting the requirements of industry, encouraging students to form companies in the development, telling them how to do it (2) consulting for technology transfer from University to industry 3. 4. Derived from the University of Companies, construction companies (zohu & Etzkowitz, 2008).

The main characteristics are the Knowledge University the business entrepreneur. But with so many definitions of this type University case in which all refer to the same features and one of the features harsh words from a variety of financial income, entrepreneurial activities of members of the university (students and teachers), employing different strategies to improve the organizational structure University the activities of the cart and supporting entrepreneurship and creation of new companies and businesses (cano, 2006).

Currently, the economy of developed countries is more than ever dependent on the production, dissemination and use of knowledge. In these circumstances, universities as institutions of knowledge production and dissemination, other than for education and research, are not considered to be expected that the universities have a more active role in the development of national and regional economy (Etzkowitz, 2006).

This is somewhat expected that the dynamics and active involvement of the third mission of universities is seen (woollard, 2010). Accomplish such a mission requires the integration of entrepreneurship in all components of the system of higher education. To do this, create the enabling environment through the provision of necessary policies, infrastructure, management, organization, funding, staffing and professional process is necessary Documented cases briefly discussed in this paper, after stating the problem and the importance of the issue, the conceptual model, originating from the primary and secondary objectives and methodology of the research will be specified they can be based on the favorable outcome of the review, explain the characteristics University the entrepreneur and evaluation model based on structural equation modeling achieved Mazandaran University.
2. Background of the study

2.1. Theoretical Foundations

Of entrepreneurship as an engine of economic development remembered. Currently, the economy of developed countries is more than ever dependent on the production, dissemination and use of knowledge. In these circumstances, universities as institutions, production and distribution of knowledge, other than for education and research, are not considered and it is expected that the universities have a more active role in the development of national and regional economy (Etzkowitz, 2006). This is somewhat expected that the dynamics and active involvement of the third mission of universities is seen (woollard, 2010). Accomplish such a mission requires the integration of entrepreneurship in all components of the system of higher education. To do this, create the enabling environment through the provision of necessary policies, infrastructure, management, organization, funding, staffing and professional process is necessary (klofston, 2008).

In fact, one of the roles and special effects on their environment in a university or University of the third generation University entrepreneur crystallized. Attention to the needs of the University community and interactive communications triple government, industry and academia has been achieved. University academic entrepreneurs who not only meet the needs and expectations of their environment are diverse, but its operational plans and procedures for the culture of entrepreneurship and education of entrepreneurs is to review and reform (Mozaffari and Shamsi, 2011). Etzkowitz an entrepreneur as defined by University academic entrepreneurship and commercialization activities students do to improve the performance of national and regional economic and financial advantage and benefit of University and its faculty (Philpott, et all, 2011).

The main characteristics are entrepreneur University commercialization of knowledge. However, multiple definitions of entrepreneurial university place refers to the common features University all entrepreneur such features include: a variety of financial income, entrepreneurial activities of the university as a soft output (students and teachers), employing various strategies to improve compatibility with the organizational structures University entrepreneurial activities, including participatory management and creation and supporting new businesses and business (cano, 2006).

2.2. History of similar research

Filpot et al (2011) with the aim of studying the entrepreneurial university and conflicts of explaining its basic academic and entrepreneurial university campus in European societies during interviews designed half and qualitative studies that have been done on this topic. Found a move down to the ideal of an entrepreneurial university is not appropriate and commercial activity decreases. They have also come to the conclusion that the activities of the program (publication of books, articles and research), despite strenuous activity (patents, companies establish academic) results may be more favorable to entrepreneurship (Filpot and
others, 2011). Volard (2010) also investigated the expression and created a theoretical model approach to the entrepreneurial university of the University of Great Britain by adopting a systematic and sustainable approach to create a new theory of academic entrepreneurship to accept an input, process and output is discussed. And come to the conclusion that the appropriate system of academic entrepreneurship by encouraging faculty members to have done business behavior that increases your input. Institute tendency toward entrepreneurship causing a positive output increases. The financial implications of the entrepreneurial University and its efficacy have a positive impact directly on the input. Supporting entrepreneurial culture and the other processes facilitate the academic entrepreneurship.

Reza Najari (2009) in his doctoral dissertation titled pattern design and explain the factors influencing academic entrepreneurship in PNU looking for factors affecting academic entrepreneurship and features that affect its ramifications on the tripartite model of the structure, the content and context. Based on these factors and the dimensions of academic entrepreneurship and entrepreneurship education were significantly related. The population of this study consisted of the heads and deputys of Payam Noor University in provincial centers and entrepreneurship centers, these units were responsible (Najari et al, 2009).

Nadiri Khanlu (2008) in his Master's thesis identifies and develops a model of knowledge transfer and commercialization of university-based entrepreneurship requirements of the top five universities in the world. According to the results of a survey of experts, policy Triggers for teachers in the distribution of income has the highest importance for academic entrepreneurship and networking needs, financial support(Nadiri Khanlu et al, 2010).

3. Conceptual Model

Based on the Theoretical Foundations basis for research and expression characteristics of an entrepreneurial university background, finally, the conceptual model shown in Figure 1 is used.
4. Research Methodology

The method has been different opinions and view dungeons (Zohori, 2002). Despite this, according to the method of theorizing quad view, the expansion or improvement of existing theories, comparing different theoretical perspective, study the phenomenon of using different theoretical perspectives and the study documented phenomenon and repeated in the new environment (Feldman, 2007), the method of the present study is based on objective and descriptive. The study population included 279 subjects in all educational and research Mazandaran university professors and experts have formed. Study of simple random sampling method and was classified, and 160 people responded to the questionnaire and data analysis was performed based on their input.

The scope of the current research topics related to academic entrepreneurship and features University entrepreneur and evaluation of these features in Mazandaran University, the period of the data collected in the year leading up to 89-90, a time and place territory to all faculty and staff of the University of Mazandaran formed. Among the four tools collect the required data, the questionnaire used in this study. Questionnaire containing demographic questions and 49 questions 6 scale has ten options. Each of the questionnaire, representing variables in total, the
assessment with regard to all aspects and features of Mazandaran University has an entrepreneurial university. The method of collecting the data and information needed research questionnaire was designed such that, the first person in possession of the sample and the explanation they offer and then the second person is attempting to collect them. After collecting the data required investigating all of them encoded, then the database software SPSS and LISREL.

Then, their classification, descriptive statistics were calculated for the data and the evaluation of the model, the reliability and logical relation to the questions of the good test model (LISREL software), Cronbach's alpha and EGF (SPSS software) is used. Experts in structural equation modeling, a wide variety of models aimed essentially similar to portray the relationships between the observed variables are employed. The goal is to allow for a little test a theoretical model assumed by the researcher. In short, various theoretical models can be used structural equation modeling, are tested. These models assume that defines how a set of variables and structures, and how these structures are linked. Objective analysis, structural equation modeling is to determine to what extent the theoretical model is supported by the data sample. If the data sample, confirmed the theoretical model, then one can assume a more sophisticated theoretical models. If the sample data confirm the theoretical models do not, then you can modify the basic model and tested it again or other theoretical models used to design and test. As a result of structural equation modeling, theoretical models using scientific growth hypothesis proves to expand our understanding of the complex relationships between structures. The primary purpose of the application of structural equation modeling of a theoretical model are statistically significant, to test theories. Statistics, the model determines the degree to which the variance - covariance structural equation model typical protection. The overall fit measures include improved goodness of fit index (AG-Fi), etc.. These criteria are based on the difference between the observed matrix or matrix S and the main producers of variance - covariance Σ is (Ghasemi, 2009).

Goodness of fit index (FI G) matrix based on the ratio of the sum of squared differences between the observed and reproduced for the observed variance. Goodness of fit of the variance covariance matrix S measures the return generated by the matrix Σ is estimated. For example, in the model, this value is 0.98, so 0.98 S matrix generated by the matrix Σ is predicted. Goodness of fit index can be used to estimate maximum likelihood, least squares, generalized least squares non-weighted and calculated (ibid.). Various methods for determining the validity (validity) gauges that one of them are the question of experts (Bazargan et al, 2001). Questions gauges study is validated, the components of the measurement variables, the literature has been the subject of research. Ie, the experts agreed that in case they have been getting. In addition, the questionnaire was designed to test for the number of 10 professors and experts were after receiving corrective feedback final questionnaire design and data collection were used. To determine the reliability (reliability) and there are several different ways of measuring instruments that one of which is a measure of internal consistency (Conca and others, 2004). Internal consistency with Cronbach's alpha coefficient measuring instruments can (SPSS software) measure (Cronbach, 1951). This method is used in most studies (Peterson, 2003). Although the minimum acceptable value for this ratio should be 0.70, the values of 0.60 and
0.55, and the reception are also acceptable (Ferry & van, 2002). In this study, the reliability of the measuring instrument is 0.95.

5. Results and findings

Of the 260-person study sample, 13% of women and 87% were male. Among the respondents, 1% of associate degree, 10%, undergraduate, 15%, and 74% of master's are doctoral or higher. 5% of respondents have less than 5 years, 15% between 5 and 10 years, 39% between 11 and 15 years, and 20% between 16 and 20 years, 19% between 21 and 25 years and 2% have more than 25 years’ experience.

Documentation related to the literature review, although the common characteristics University entrepreneur can be categorized and classified into different forms, but they are together and using the literature, the research hypotheses are expressed as follows.

V (management, infrastructure, output, services, community) having explained the characteristics of an entrepreneurial university is the University of Mazandaran. As already described, and the overall fit of the conceptual model to test hypotheses mentioned in the article, the test model was developed with the help of structural equation modeling. Test fit a lot of diversity. In this paper, a number of these tests were sufficient and the resulting structural equation model LISREL software is also provided. In Figure 2, the coefficients t Value of the relationships between explanatory variables have shown characteristics University entrepreneur. The structural equations, variables explaining the effect of the changing relationship between the two species studied (entrepreneurial university is being considered) are as follows: Direct and indirect

As the chart Value T is known all explanatory variables both direct and indirect effects on indicators of entrepreneurial University.
Figure 2: Factor T Value of the relationship between research variables and the characteristics University entrepreneur

Figure 3: Estimated coefficients (non-standard) to investigate the relationship between the variables and characteristics University entrepreneur
Figure 4: Standardized coefficients for the relationships between the variables and characteristics of University research and entrepreneurship.

The variables determining the structural equation model based on the output Characteristics University the third generation LISREL software will be provided. It should be noted that the various criteria to determine the fitness of a structural equation model, indices, RMSEA, GFI and NFI is the best and most notably and can adequately necessary to determine the fitness of a structural equation model. RMSEA ≤ 0.10 indicates that this model is an acceptable fit to the data of the real world. In this study, RMSEA = 0.076, GFI = 0.98, AGFI = 0.93, NFI = 0.91 and was NNFI = 0.90 therefore, this model has the necessary fitness and overall it has been approved as GFI and NFI RMSEA less than 10% and more than 90 percent, five variables can be observed and 99% of Mazandaran University of entrepreneurial characteristics are explained as direct and indirect. As shown in Figure A, all direct relationships and indirect variables is evident in the growth centers approved because none of the coefficients T-Value of less than 2 and not red. Therefore, all direct and indirect ties entered into the structural equation.

Table A - analysis and structural equation model
As reflected in Table A and Figure A, can be seen, all direct and indirect relationships between variables observable characteristics University entrepreneur, has been approved. The structural equation model is based on the standard ones (just direct relationships):

\[ EU = (0.51 \text{ MNG} + 0.45 \text{ ZIRSAKH} + 0.57 \text{ KHO} + 0.45 \text{KHADAM} + 0.59 \text{ ERTE}) \]

And with regard to the number one, a structural equation model based on the non-standard ones (just direct relationships)

\[ EU = (0.54 \text{ MNG} + 0.56 \text{ ZIRSAKH} + 0.57 \text{ KHO} + 0.49 \text{KHADAM} + 0.65 \text{ ERTE}) \]

According to the above equation, any change and improvements in performance can be evaluated by considering the following five based on the above study and explain the mathematical relationships.

In the present study RMSEA indices or the square root of the variance of the estimation error is less than ten percent (RMSEA = 0.076) as well as table according to the obtained values for measures of goodness of fit of the model, which has been calculated, conceptual model explaining the characteristics University the entrepreneur assessment of Mazandaran University reflects a good fit and is ideal and we can say, this conceptual model is correctly applied in the community. The variables associated with community service as effective as low-impact and changing the variables are known. In other words, an increase of one unit of communication with the community, entrepreneur characteristics of Mazandaran University of 0.65 units increases. Services for changing this value will increase by 0.49 units. The other factors can also increase the understanding that the management of a single variable, output and infrastructure, Saw an increase of 0.54, 0.57, 0.56, Mazandaran University will be one of the characteristics of the entrepreneur.

7 - Conclusion

Because University the unique entrepreneurial university not only meet the needs and expectations of their environment is diverse, rather, its programs and operational processes to promote a culture of entrepreneurship and education of entrepreneurs. Implementation University programs and activities involving cooperation between industries are government and university. The results of the analysis indicate favorable evaluation model of entrepreneurial characteristics of Mazandaran University. Therefore, the researcher proposed as a solution to improve and the development of entrepreneurial characteristics of the university would be better. A literature review of research and entrepreneurial model to evaluate the characteristics of
Mazandaran University which consists of five dimensions of management, services, infrastructure, community and communication output is calculated according to the number 1 ranking impact factor (estimated standard e) the dimensions defined in the explanation of the impact of the changing characteristics of the entrepreneurial University can be said for the relationship with the community, Mazandaran University crystallization can be used to find the characteristics of entrepreneurial effort will pay more and academic links with other universities and research centers and small and large manufacturing and service industries at national and local level to develop. Policies and legislation to improve the relationship between industry and universities and industry, particularly the requirement to use the technology developed at universities and the requirement to identify the needs of industry and University collaborative research with and also to strengthen the laws relating to the protection University intellectual property rights to ensure researchers and inventors and also to ensure that the concerns of the industry to meet them. The hand with the gradual reduction of the budget allocated to universities and strengthen the sense and tend to lead to financial independence of the measures for the development of their activities in the field of business and entrepreneurship have become the basic steps.

Then, according to the rating of the other estimated coefficients, the second effect is the output variable. The better the Quality University care Bitch and the pressures of the outside world as it does not disrupt the educational mission and quality. University policy should be directed towards projects and master's theses and doctoral dissertations on the ability of the business. According to the assessment of necessary infrastructure Entrepreneurial University although the quality of electronic communications technology in administrative offices and is evaluated as good Mazandaran University to develop and equip and update new educational technology in classrooms to diversify their education.

Part of the training program must change the Mazandaran University so specialized, collaborative learning and problem-based learning and research and is an integral part of teaching methods and processing capabilities to strengthen students' ideas. Entrepreneurship education and training in all disciplines including lessons design and develop a business plan, small business management and entrepreneurship theoretical foundations included. Management component should be said about the Mazandaran University of flexible organizational structure, less formal and rigid bureaucracy out of the office and need for decentralization of decisions brought about a change in its management system and easy to control the retention and foster employee empowerment organizational climate and culture and create effective and stimulating innovation and encouraging ideas and make liberal seats to take the step towards an entrepreneurial university. After-sales service in the Mazandaran University encourages faculty and alumni to form a splinter company and scientific and technical and financial support to their short and long term and context to provide physical space, and other hardware and software to support companies growth and development centers to go to University, it is necessary to improve their job situation. University laboratories and workshops in the industrial sector are possible.
In answer to the main research question, according to the results presented in the previous paragraph essay, conceptual model to evaluate the goodness of fit tests have shown that the entrepreneurial characteristics of Mazandaran University of fitting to have the statistical community has been handled properly. In contrast to previous studies, the present study is the first study is a statistical analysis on the other hand, similar studies have been conducted on the impact of entrepreneurial college however, and research seeks to provide a conceptual model to evaluate the Characteristics University the entrepreneur. Also, the weight and influence of each variable was examined. However, the research Vlard (2010) and Joseph (2008), Najari (2009) and Amin Mozaffari (2011) and Fakoor (2007) has discussed other issues the consequences of academic entrepreneurship is mainly intended. In comparison with other studies of the research conducted in this case can be cited in the text in this paper, we present a conceptual model, the testing of this model by most statistical software such as LISREL and the use of structural equation modeling was used to confirm the tests done.
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