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PROVIDING THE LOCAL MODEL FOR PIONEER UNIVERSITY IN IRAN

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ABSTRACT

This study aims at providing a local model for pioneer university in Iran in order to utilize planning and politicizing the higher Education. This research has mixed qualitative and quantitative methods. The statistical population of this research consists of 4288 managers and faculty members in branches of Islamic Azad University in District 8 which has a comprehensive grade. The samples are obtained equal to 344 according to Cochran Formula. This research has stratified cross sectional sampling method including 84 managers and 260 faculty members. The researcher-made questionnaire containing 167 questions is the research tool in this research. The data is analyzed by descriptive statistics including the mean, mode, and variance, and also by inferential statistics such as the exploratory factor analysis, confirmatory factor analysis. Afterwards the structural equation model is used to provide a model for pioneer university in Iran. The results indicate that the management and leadership style, educational factors, research factors, human resources, budget and infrastructure and technology are the major factors for creating the university pioneer.

Keywords: *Local Model, Pioneer University*

INTRODUCTION

The higher education institutions have played the significant roles in conceptualization and creation of globalization, however, the globalization has created new challenges for these institutions (Mehralizadeh, quoteb by Ghourchian *et al.*, 2004).

Furthermore, the key development is created at universities due to the emergence and development of information and communication technology and the development of a knowledge society. These changes are initially started from the social environment by creating the network society wherein the information comes first. Then, the knowledge creation system is changed and finally it covers the structure and content of traditional universities (Scott, 2000).

The systems of higher education institutions are divided into three generations; first, the educational universities; second, the research-educational universities, and third, the pioneer and entrepreneur universities and those which involved in creating the technology. Nowadays, the universities of Iran gave the first generation education system, while the third generation universities are expanding throughout the world. It is noteworthy that these paradigmatic changes do not mean rejecting the previous missions, but the first, second and third generation universities have gradually completed their missions (Wissema, 2009).

Etzkowitz (2004) argues that the second development of universities has changed the traditional education of universities to an entrepreneurial university by combining the mission of economic and social development. On the other hand, Wissema (2009) considers this development as the third generation of universities. He argues that the universities are changing according to the increasing competition for funding, attracting the students and university authorities as well as covering the government requests for technology-based economic growth. The "triple helix model" is another popular model for the third generation university and is provided based on the communication and cooperation among the government, industry and university (Goldstein, 2010).

This model provides the new criteria for traditional training and mission of research, internal organization changes, which are mainly based on the internal and external cooperation, the new methods of

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management and new institution capacities (ibid). According to a more detailed perspective, this view reflects the knowledge transfer with an emphasis on the progress of economic development through the strategies of technologic innovations.

According to the above-mentioned issues, the investigation of higher education status in Iran indicates that the conducted studies have focused more on the quality of education at universities, evaluation of university performance and the qualitative and quantitative development of university and there are no numerous studies on evaluation of pioneer universities with regard to its all effective factors in Iran. Therefore, this study is conducted with the aim at investigating the factors affecting the creation of pioneer university in order to provide a local model for pioneer university in higher education of Iran.

MATERIALS AND METHODS

In this study, the researcher utilizes both quantitative and qualitative methods in order to collect and analyze data, integrate the findings and conclude the subject of research.

At the first stage, a list of factors affecting the creation of pioneer university is created based on the previous research and literature inside and outside the country, and then a list of factors affecting the creation of pioneer university is provided for experts at department of education sciences after determining the primary factors in order to select the factors affecting the creation and design of pioneer university model and provide them in the form of a matrix for research implementation. The required tools of research are provided after determining the main components of research and also the reliability and validity of data collection tools are determined through pilot study of questionnaire with experimental group of managers and professors. In the last phase, the collected data is analyzed through the research tools including the interview and questionnaire and by statistical software, and finally the overall conclusion of pioneer university model is provided in the form of a pioneer university model after explaining and understanding the research findings.

The statistical population of this study consists of all 4288 senior, middle and operational managers and also the board members working in university branches with the comprehensive grades in District 8 of Islamic Azad University; and the sample size is obtained equal to 344 by relative stratified sampling method and Cochran formula.

The questionnaire and matrix components are utilized to collect data. After documentary investigation of theoretical models through models in theoretical basis of research, the matrix of research components is utilized to be studies in expert group and determine the main research components. Furthermore, the researcher-made mixed questionnaire is utilized to measure the factors affecting the creation of a pioneer university. The reliability of research indices is higher than the acceptable minimal (0.7) and it is confirmed. The statistical models of correlation coefficient and also the statistical models, exploratory and confirmatory factor analysis, are utilized to investigate the research hypotheses for data analysis as well as responding to the research questions, and thus identifying and explaining the relationships between the variables affecting the creation of a pioneer university. The advanced statistics including the structural equation are utilized after determining the relationship between the components in order to develop the pioneer university model.

RESULTS AND DISCUSSION

Result

Main question: What is the local model for pioneer university in Iran?

The confirmatory factor analysis is utilized to clarify and verify the main components for creation of a pioneer university and provide the local model; and the LISREL software version 7.8 is used for model fit. Therefore, the scheme of mathematical model is developed by depicting the relationship between the subsidiary and main component, and then the model fit indexes of measurement model are measured and evaluated. The fit indexes are utilized such as the chi-square, normed chi-square (χ^2/df). From the perspective of most of the experts, the normed chi-square less than 3 indicate the appropriate model fit (Giles, 2002). The obtained values for indices are presented in the following table.

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Table 1: Model fit indices for creation of pioneer university

Fit indexes	χ^2	df	χ^2/df	RMSEA	GFI	AGFI	CFI
Values of indexes	753.3	474	1.58	0.067	0.89	0.81	0.92

Based on the table above, the studied fit indexes indicate that the normed chi-square is equal to 2.33 for measurement model in this study and it represents the acceptable fit of model with data. The comparative fitness index (CFI) is more than 0.9 of the goodness of fit index (GFI) 0.89, and the adjusted goodness of fit (AGFI) is equal to 0.89, and RMSEA (Root mean square error of approximation) equal to 0.067. Based on the values, it can be concluded that the obtained model has a good fit for data. The path coefficients in the model are as follows.

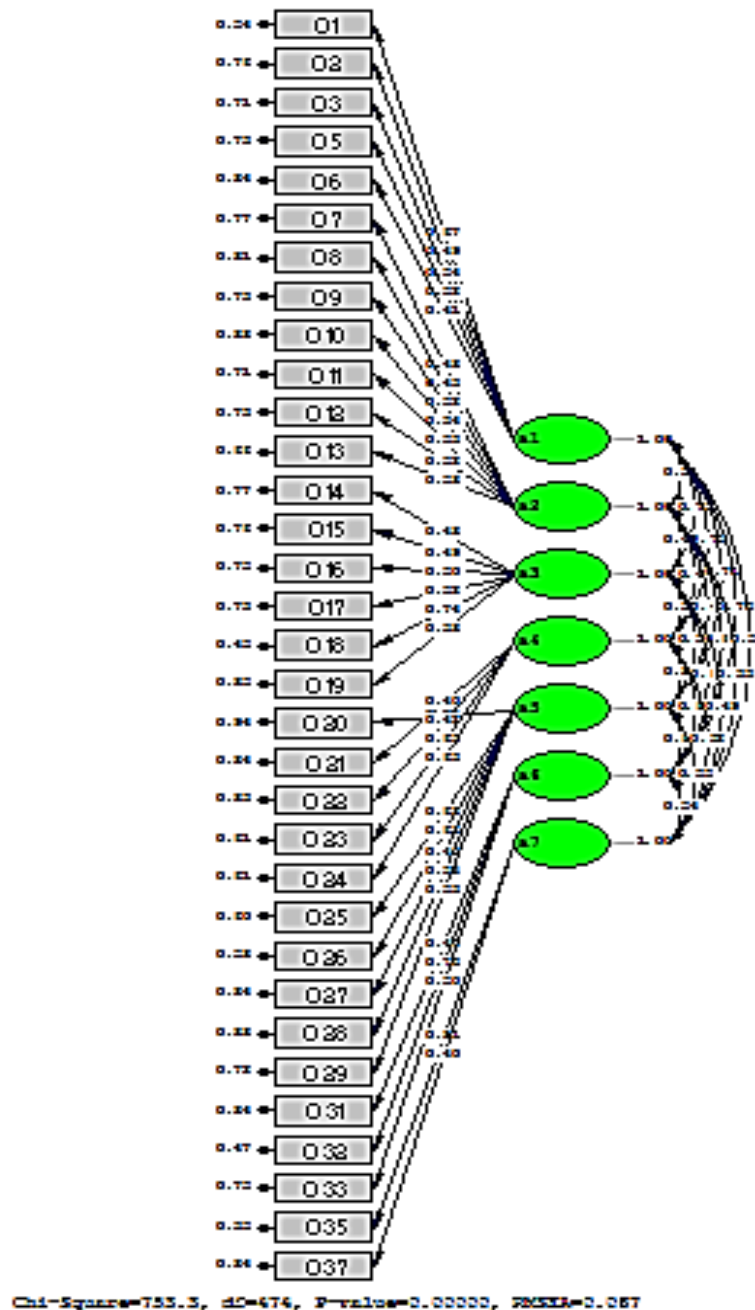


Figure 1: Structural model including the path coefficients (software output)

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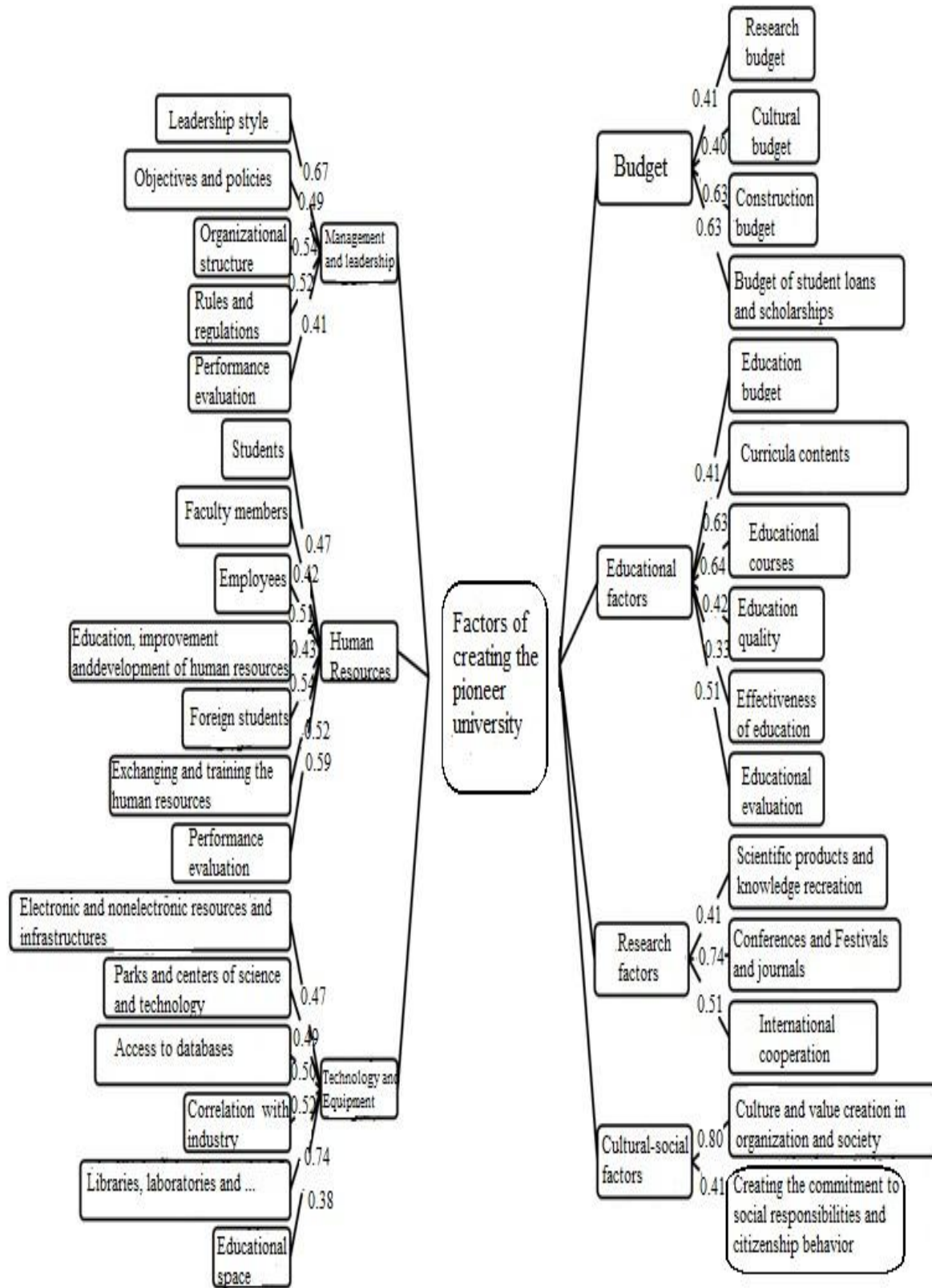


Figure 2: Structural model including the path coefficients

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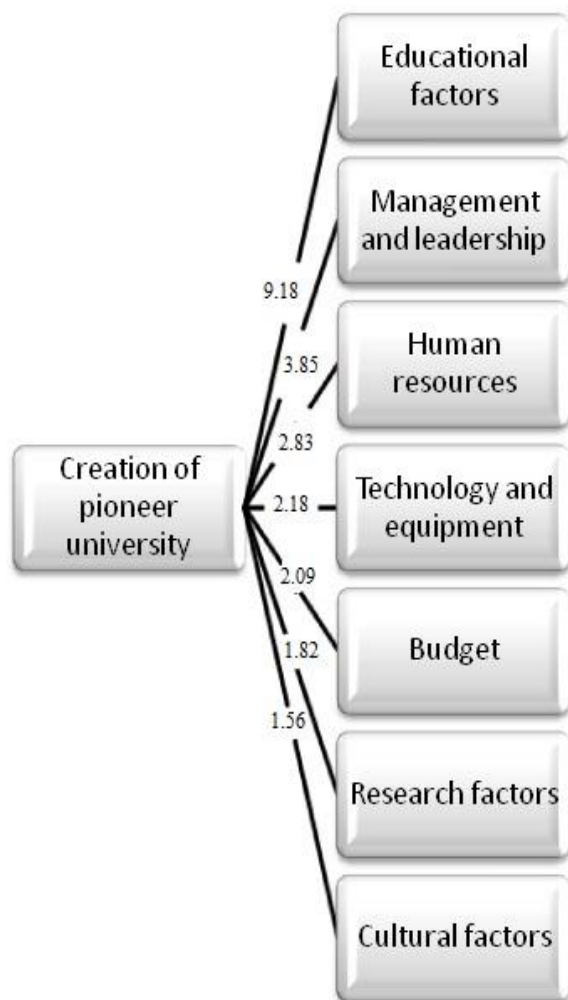


Figure 3: Eigenvalue of components and the contribution of each one in creating the pioneer university

Among the components of pioneer university in the model, the educational factors have higher effect on creation of pioneer university is higher, but the cultural factors have lower.

Based on the models above:

7 main components are extracted from the sub-components and this is similar to the exploratory model, but the sub-components are different in terms of some main components. The main and sub-components are as follows:

1. **Management and leadership component:** This component consists of 5 sub-components. The path coefficients are shown in the table below.

Table 2: Management and leadership sub-components in pioneer university creation model

Management and leadership		Path coefficients	t	Significance level
1.	Management and leadership style	0.67	68.7	0.001
2.	Objectives and policies	0.49	32.5	0.001
3.	Organizational structure	0.54	93.5	0.001
4.	Rules and regulations	0.52	67.5	0.001
5.	Performance evaluation	0.41	36.4	0.010

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Among the sub-components of leadership and management style in the model, the leadership and management style has higher effect on the leading universities, but the performance evaluation has the lower. The strategic vision sub-component has no significant path coefficient, and thus removed.

2. **Human resources component:** This component consists of 7 sub-components. The path coefficients are shown in the table below.

Table 3: Sub-components of human resources in pioneer university creation model

Human Resources	Path coefficients	t	Significance level
1. Students	0.47	79.4	0.01
2. Faculty members	0.43	38.4	0.01
3. Employees	0.51	25.5	0.001
4. Education, improvement and development of human resources	0.33	34.5	0.001
5. Foreign students	0.54	67.5	0.001
6. Exchanging and training the human resources	0.52	35.5	0.001
7. Performance evaluation	0.59	23.6	0.001

Among the sub-components of human resources in the model, the performance evaluation sub-component has higher effect on the creation of pioneer university.

3. **Technology and equipment component:** This component consists of 6 sub-components. The path coefficients are shown in the table below.

Table 4: Sub-components of technology and equipment in pioneer university creation model

Technology and Equipment	Path coefficients	t	Significance level
1. Electronic and non-electronic resources and infrastructures	0.47	5.05	0.001
2. Parks and centers of science and technology	0.49	30.5	0.001
3. Access to databases	0.50	37.5	0.001
4. Correlation with industrial	0.52	70.5	0.001
5. Libraries, laboratories and ...	0.74	57.8	0.001
6. Educational space	0.38	99.3	0.040

Among the sub-components of technology and equipment in the model, the sub-component of "library, laboratories, and..." has the higher effect on the creation of a pioneer university, but the educational space has the lower.

4. **Budget component:** This component consists of 4 sub-components. The path coefficients are shown in the table below.

Table 5: Sub-components of budget in pioneer university creation model

Budget	Path coefficients	t	Significance level
1. Research budget	0.41	22.4	0.01
2. Cultural budget	0.40	24.4	0.01
3. Construction budget	0.63	74.6	0.001
4. Budget of student loans and scholarships	0.63	79.6	0.001

Among the sub-components of budget in the model, the "budget of student loans and scholarships" sub-component has the higher effect on the creation of a pioneer university. It should be noted that the

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educational budget in this component has no significant path coefficient, but it has the significant path coefficient in educational factor with sub-components of educational factors.

5. **"Educational factors" component:** This component consists of 6 sub-components. The path coefficients are shown in the table below.

Table 6: Sub-components of educational factors in pioneer university creation model

Educational factors		Path coefficients	t	Significance level
1.	Educational budget	0.41	24.4	0.010
2.	Curricula content	0.63	65.6	0.001
3.	Educational courses	0.64	15.7	0.001
4.	Education quality	0.42	37.4	0.01
5.	Effectiveness of education	0.33	40.3	0.031
6.	Educational evaluation	0.53	79.5	0.001

Among the sub-components of educational factors in the model, the "educational courses" sub component has the higher effect on the creation of a pioneer university, and interestingly, the educational budget has no significant coefficient on this component.

6. **"Research factors" component:** This component consists of 3 sub-components. The path coefficients are shown in the table below.

Table 7: Sub-components of research factors in pioneer university creation model

Research factors		Path coefficients	t	Significance level
1.	Scientific products and knowledge recreation	0.41	24.4	0.01
2.	Conferences, festivals and journals	0.74	65.7	0.001
3.	International cooperation	0.51	31.5	0.001

Among the sub-components of research factors in the model, the "conferences, festivals and journals" sub-component has the higher effect on the creation of a pioneer university. The research orientation and evaluation of research activities have no significant path coefficients, and thus removed.

7. **"Cultural-social factors" component:** This component consists of 6 sub-components. The path coefficients are shown in the table below.

Table 8: Sub-components of cultural-social factors in pioneer university creation model

Cultural-social factors		Path coefficients	t	Significance level
1.	Culture and value creation in organization and society	0.80	36.5	0.001
2.	Creating the commitment to social responsibilities and citizenship behavior	0.41	80.3	0.029

Among the sub-components of social-cultural factors in the model, the culture and value creation in the organization and society has the higher effect on the creation of a pioneer university. Strengthening the foundations of moralization and spirituality at work (professional ethics) have no significant path coefficient, and thus removed.

Discussion

Based on the results of data analysis for the main research question, the local model for pioneer university consists of the following components: Management and leadership, organizational structure, human

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resources, technology and equipment infrastructure, budget, educational factors, research factors, and cultural and social factors.

According to Christensen, the capabilities in individuals and especially the university employees is like the icy mountains which can only be seen in ten percent and its major part is hidden and can be observed and clarified by the management and leadership.

Furthermore, according to the findings of research by Safarzadeh *et al.*, (2009), the application of transformational leadership has the highest effect on the creation of pioneer university among the factors of organizational revival factors.

According to Jahed and Arasteh (2011), the organizational structure is beyond a diagram and model for communications and coordination and connects the human resources, technology, duties and in general the environmental elements of organization to achieve its objectives. The utilization of innovative structure means that the structure is progressing towards the dynamism, flexibility, lack of focus, devolution of authorities and employing the empowered employees.

A common goal and resources for value creation at university attracts the faculty members' participation in fulfilling the academic innovation and mobilizes all individuals and resources in this way. The more this insight and vision is strong in the organization, the more the application of appropriate communication strategies with innovation will be easy. Covin and Slevin (1988) have also noted these cases in their findings.

The basic strategy for human resource management is to use the innovation indices in promoting the faculty members. The human resource management is the source of value creation chain in the organizations. This value chain starts from the faculty members at universities and connects to students, staff and then the society community; and the value creation chain of human resources area should convert the strategy to outcome, the mission of organization to action, the organizational vision to a valuable objective suitable for loyalty and dedication (Hargreaves, 2001).

The financial independence and budget are the main categories in management of financial resources and. Relying on the wealth creation through development of knowledge-based companies, as an alternative to crude oil sales revenue, makes the universities independent on the oil and thus they will reach the financial independence. These findings are consistent with the results of research by Hashemnia *et al.*, (2009) and Geua *et al.*, (2003).

According to the explanation of infrastructure, technology and facilities, it can be concluded that the infrastructure and facilities of university are among the important elements for universities and higher education institutions in order to achieve the excellence. The educational infrastructures, the physical properties and facilities directly and indirectly help the process of training and learning at university (Mousa and Ahmad, 2012). In the field of educational factors, it can be argued that giving the preference to the pragmatism in curriculum with innovative objectives and content will make a link between the students and labor market. This result is consistent with the research by Britton (1999) and Mansourian *et al.*, (2013). In the field of research factors, it can be explained that paying the attention to research is one of the main affairs in scientific communities. These results are consistent with the research by Etkowitz (2004) and Hosseinzadeh (2003). In the field of social and cultural factors, it can be concluded that the entrepreneurship culture should be developed in university members in order to attract the faculty members' participation and create the effectiveness in academic innovation activities. If a university is going to be developed, the culture of the whole organization should be changed to the entrepreneurial space (Moghimi, 2005). These findings are consistent with the results of research by Valentine *et al.*, (2002) and Arefi (2005).

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