

Research Article

DEVELOPING A MODEL PATTERN OF ACADEMIC DEVELOPMENT IN IRAN: THE CASE OF PAYAM NOOR UNIVERSITY OF KHORASAN RAZAVI)

Mohammad Mousavi¹ and *Seyed Ali Vaziri²

¹ *Department of Management, Payame Noor University, Tehran , Iran*

² *PHD Student in Entrepreneurship Management, Shakhes Pajouh , Isfahan, Iran*

**Author for Correspondence*

ABSTRACT

This study attempted to design and implement a model of entrepreneurship with the purpose of recognizing the factors affecting the development of university entrepreneurship. The case data come from Payame Noor Khorasan University of Khorasan Razavi. Study was done in all centers and units of Payame Noor University of Khorasan Razavi.

It was a cross-sectional descriptive correlation applied research using survey data. To collect data, a questionnaire consisting of 36 questions related to entrepreneurship factors and 44 questions related to university entrepreneurship was used. To complete the questionnaire, the organization's experts (those who know the organization better) and the heads and deputies of the Centers were used. Reliability of this questionnaire was calculated based on Cronbach's alpha coefficient (96.) The validity of the test was confirmed by the content validity method. By using multivariate regression method such as normalization test, and VIF statistics, indices and relationships have been investigated. By testing 14 hypotheses, except for a hypothesis of content factors, two hypotheses of underlying factors and two main hypotheses, the rest of the hypotheses were confirmed. On the basis of the collected data, using the confirmatory factor analysis and path analysis methods of SPSS and LISREL software, the designed conceptual model of the test was modified and implemented and the final model was proposed. Finally, some suggestions were made for future research.

Keywords: *Academic Entrepreneurship, Academic Entrepreneurial Model, Structural Factors, Content Factors, Underlying Factors, Payam Noor University Khorasan Razavi*

INTRODUCTION

The change and transformation in the conditions and needs of the community have caused changes in the mission of the universities. So, their initial mission, which is education, has moved towards research and has changed towards entrepreneurship. Various factors, such as increasing the number of graduates of higher education institutions are challenging the paradigm of governance of modern state-owned universities, especially government universities. In a summary, it can be argued that the increasing pressures on the part of the government and the ministry of science, research and technology to increase the number of graduates, increasing unemployment, and the crisis of youth employment, especially educated people, are changing expectations of university applicants, competition, changing market needs, accountability and responsiveness to community members, quality and productivity revolution, changing knowledge and necessity of knowledge management and knowledge commercialization. The need for transformation in traditional education and the tendency towards new education and applied research, the necessity of using technologies and other factors that have changed the mission, role and functions of universities, the need for university entrepreneurship and the establishment of entrepreneurial universities are the key strategic tools of higher education to face with these changes and pressures (Saeedi Kia, 2009) The structures existing in the universities of the country with the aim of students' special education have been formed and less is the strengthening of entrepreneurship in the students as current university graduates often do not know the basic concepts of entrepreneurship. In addition to the weakness of the educational system of universities in teaching entrepreneurship concepts, complementary non-structures

Research Article

to create a physical infrastructure for developing the entrepreneurial spirit in the students are another weakness of the system. In this regard, attention to educational science education is considered necessary and valuable. Educational training has been able to provide the necessary facilities for essential steps in entrepreneurship education that can be effective and successful in self-employment and entrepreneurship. In the current situation in the country, a situation has arisen that economic and social progress will not be possible without the attempt to modernize and strengthen entrepreneurship.

In order to commercialize knowledge in the university, the conversion of the potential value of knowledge and innovation into actual, tangible and beneficial value is, in fact, commercialization, that is, the creative ideas and new ideas of academic members, students and graduates in the fields. Different sciences can be transformed into what works, processes, products, and services that can be used in society, and in other words, it is knowledge that generates ability.

In fact, the commercialization of knowledge is one of the main orientations of academic entrepreneurship, and for science to be used, science-based knowledge-based companies create new technologies that are one of the most prominent examples of academic entrepreneurship. This study showed that "Boston Bank", for example, was a study of graduates and professors at the University of MI. In 1994 alone, more than four thousand companies started creating 1.1 million jobs, and its annual sales has risen to \$ 232 million. A study by Edward Roberts, head of the Entrepreneurship Center at MIT, found that in 2001, nearly eight thousand students had been involved in setting up new companies (one of which was Intel have been). The university sparked many ideas in classrooms and labs and was transformed into various forms by the students, reinforced with teamwork. The two emerging companies, Akama and Irobot, illustrate the use of MIT methods in business (Bart, 2006)

UNESCO, in the global vision of higher education for the 21st century, describes the new universities as "a place in which entrepreneurial skills in higher education are developed for the benefit of graduates and for the development of entrepreneurship" (Vaziri, 2010).

In the first instance of the university, it is an economic enterprise, and enterprise entrepreneurship is defined in the university as an entrepreneur of the for-profit organization. In this approach, as time passes, university directors and principals are defined as entrepreneurship of profit organizations. In this approach, with the passing of time, managers and university executives face a more difficult situation, budget and government funds are reduced and they are more responsive to using their mission. One of these options is to turn to university entrepreneurship, in which case universities should be innovative and pioneering. It is necessary to adopt methods of strategic marketing and strategic management activities to accommodate it.

In the second view, the University seeks to create an environment for active support for the use and commercialization of knowledge and to stimulate entrepreneurial behaviors among all members, including professors, employees, students and graduates in all college campus structures (Sandra & Dubinsky, 2000).

One of the main and important issues of knowledge of scholars is how to identify the determinants of entrepreneurship in academia. Experts have identified the offending factors for this research,

They intend to provide a model for various factors of university entrepreneurship. In fact, the present study is a triple study, why and how academic entrepreneurship with regard to the scientific resources of the factors affecting academic entrepreneurship.

MATERIALS AND METHODS

This research is cross sectional applied descriptive objective correlation. In terms of data collection techniques, the survey design was used. It is a fundamental research which seeks to understand the fundamental nature of social reality. In fact, a fundamental knowledge base develops the basis of the social world, while changes in the first place is trying to help the workers and students professionals in their task of solving their problems. In this type of research, the network is less central, and its main purpose is the immediate use of operational use by enterprises and companies and consumers of applied

Research Article

research and social sciences (Newman (1991)). The main intention and the main objective of the researcher to identify the factors affecting academic entrepreneurship and its application at Payame Noor University by designing a model and testing it, creating a new insight and recognition about academic entrepreneurship and its related factors. And, a better explanation of the specific type of entrepreneurship is financially and fundamentally similar (jansen & andersoon velde &. 2004).

The statistical population of this research includes all centers and units of Payame Noor University in Khorasan Razavi province, which has been at least three years since its establishment. Payame Noor University is active in 68 cities and provincial provinces by the end of 2018 has 27 centers and units. Of course, 3 year of the establishment condition is specific to the units of the university, since according to the regulations in each unit it is to be funded by the local founder board for up to 3 years, and whenever, after three years the founding board fulfills all its obligations, that unit will be converted into a center that will cover all aspects of the financial affairs of the university. It is possible to say that all the centers are a comprehensive component, but the only units that have been past three years since their establishment are the statistical population. By examining the number of centers and contingent units, it was noted that in 2016, the total number of centers and units were 27. Since this number is not high and on the other hand, it is anticipated that the centers and units do not participate in completing the questionnaire, a questionnaire was distributed among the entire population of society and there was no necessity for sampling. Therefore, sampling was not used in this study.

3.Data Collection tools

| | | | |
|---|---|---------------|---|
| Questions 1 and 2 of Questionnaire No. 1 | The existence of a relationship between the type of academic structure of academic entrepreneurship | Hypothesis 1 | Main hypothesis: The relationship between structural and academic entrepreneurship |
| Questionnaire 3 to 5 Questionnaire 1 32 to 35 Questionnaires 2 | The Relationship Between Educational Affairs and Academic Fellowship | Hypothesis 2 | |
| Questions 6 to 8 of the questionnaire 1, 22 and 24 of the questionnaire 2 | The Relationship between Research Affairs and Academic Fellowship | Hypothesis 3 | |
| Questions from 9 to 13 questionnaires and 14 to 17 questionnaires | The Relationship Between Entrepreneurship and Finance and Academic Entrepreneurship | Hypothesis 4 | |
| Questions 14 to 16 of Questionnaire No. 1 | The relationship between the organization's vision and mission and academic entrepreneurship | Hypothesis 5 | Main hypothesis: the relationship between background and academic entrepreneurship |
| Questions 17 to 20 of Questionnaire No. 2 | The relationship between management and academic work | Hypothesis 6 | |
| Questions 21 to 24 of Questionnaire No. 1 | The Relationship Between Culture Culture and Academic Fellowship | Hypothesis 7 | |
| Questions 25 to 27 of Questionnaire No. 1, 10 and 11 of Questionnaire No. 2 | The relationship between technology and academic work | Hypothesis 8 | |
| Questions 28 to 31 of Questionnaire No. 1 | The existence of a relationship between economic and financial affairs | Hypothesis 9 | The main hypothesis of the relationship between environmental and academic entrepreneurship |
| Questions 32 to 34 of Questionnaire No. 1 | The existence of a relationship between socio-cultural factors of academic entrepreneurship | Hypothesis 10 | |
| Questions 34 and 36 of Questionnaire No. 1 | The existence of a relationship between the legal and regulatory factors of academic entrepreneurship | Hypothesis 11 | |

The research analysis model:

Research Article

A conceptual model or conceptual framework is a model by which the researcher bases its theory on the relationships between the factors that have been identified in the development of an important problem. This theory may not necessarily be the theory of the researcher and logically derives from the results of previous research on the problem. Based on the conceptual model (proposed), the hypothesis machine is developed.

Results and findings

Confirmatory Factor Analysis

After reviewing the basic assumptions for performing factor analysis (such as distribution normality, etc.), the conceptual model of the design and findings was as follows:

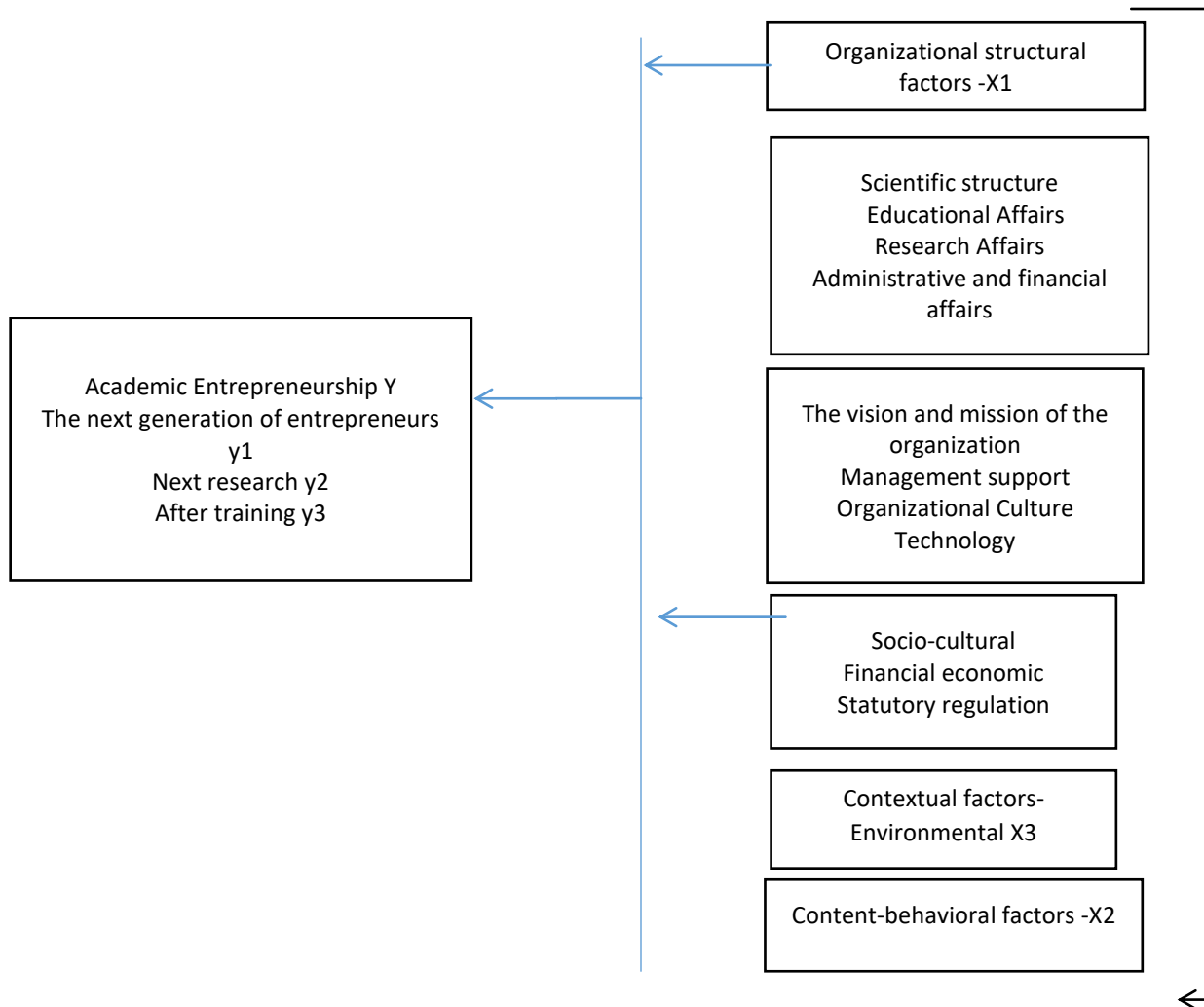


Figure 1: Designed research model

To examine the above conceptual model and to measure the significance of the measurement indices for structural triangles, content, calculated values, the confirmatory factor analysis by Liserl software is as follows:

Research Article

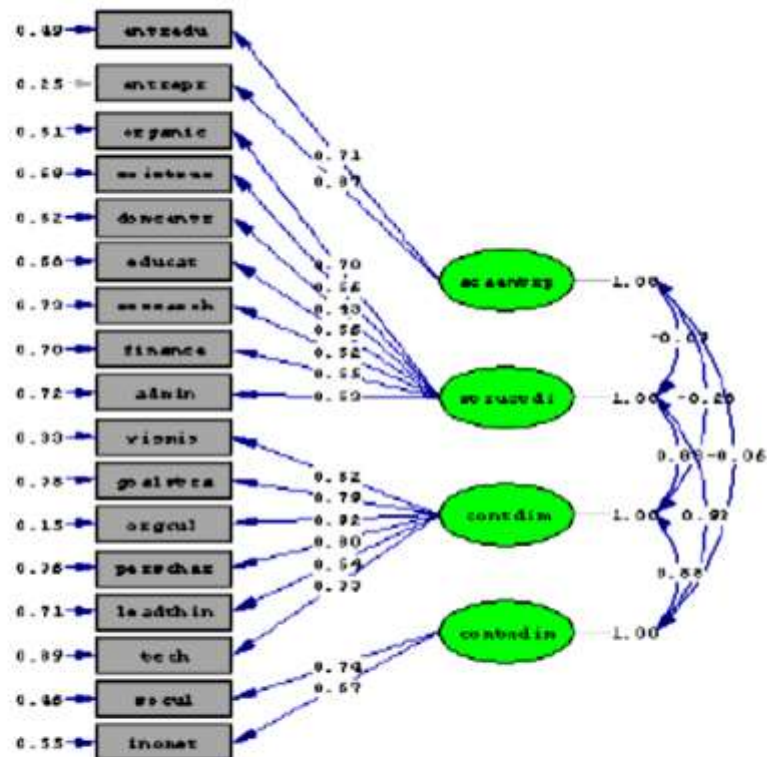
Table 1 Initial Verifiability Analysis

| Result | Sig | t | Standard error | estimate | Variable |
|--------------------------|-----|-------|----------------|----------|--------------------------------------|
| Effective confirmation | /05 | 4/01 | /14 | /57 | Scientific structure |
| Effective confirmation | /05 | 4/03 | /14 | /58 | Educational Affairs |
| Effective confirmation | /05 | 3/69 | /14 | /53 | Investigative Affairs |
| Effective confirmation | /05 | 3/92 | /14 | /56 | Administrative and financial affairs |
| Effective confirmation | /01 | 6/13 | /11 | /66 | Vision and mission |
| Absolutely not effective | /05 | 1/68 | /14 | /24 | Manager support |
| Effective confirmation | /01 | 6/85 | /10 | /70 | Organizational Culture |
| Effective confirmation | /05 | 2/79 | /14 | /40 | Technology |
| Absolutely not effective | /05 | /98 | /14 | /14 | Financial economic |
| Effective confirmation | /05 | 4/64 | /18 | /82 | Sociocultural |
| Absolutely not effective | /05 | 1/52 | /17 | /26 | Statutory regulation |
| Effective confirmation | /05 | 2/45 | /068 | /17 | AE entrepreneurship |
| Absolutely not effective | /05 | -2/38 | /065 | -/16 | Research AE |
| Effective confirmation | /05 | 4/67 | /52 | 2/41 | Educational AE |

According to the above table, the indicators whose values t are less than 2, the values of their indexes relative to the corresponding dimension in society are not different from zero (that is, there is no relation).

Research Article

Therefore, the above indicators analysis was eliminated. After the removal of non-significant indicators, a re-affirmation factor analysis was carried out with meaningful indicators.

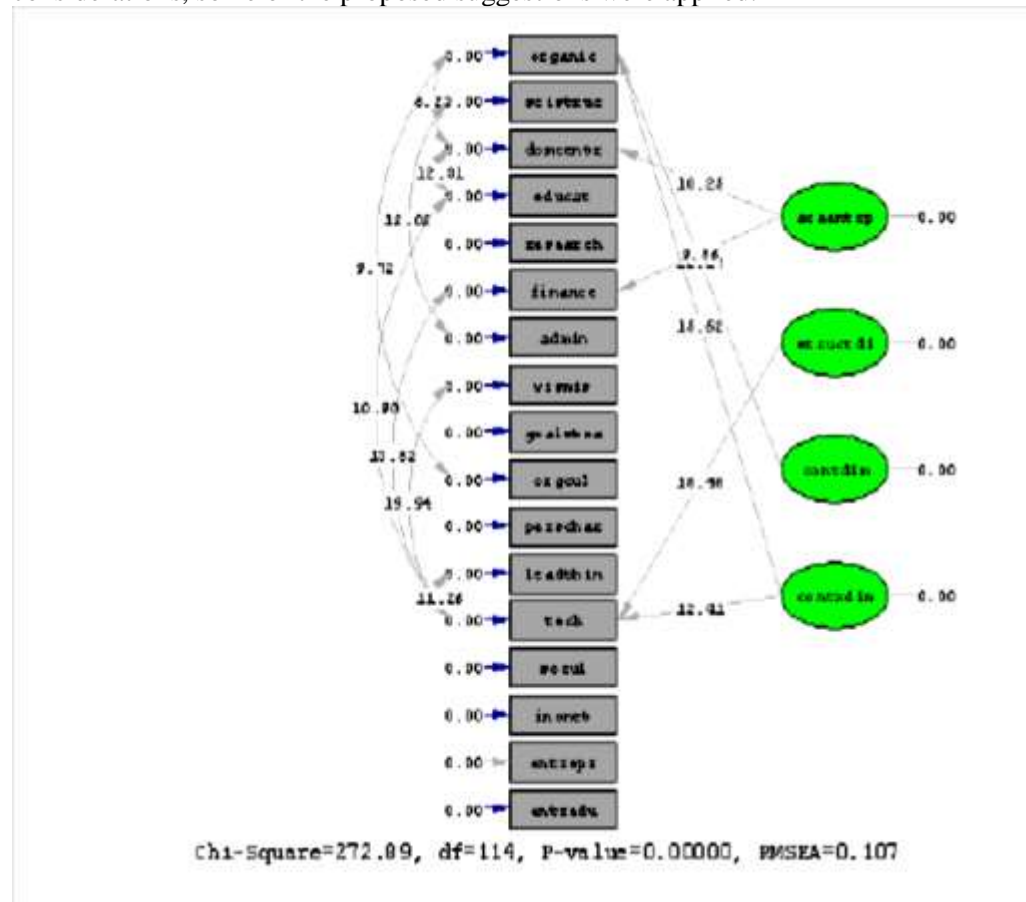


Chi-Square=272.89, df=114, P-value=0.00000, RMSEA=0.107

Table 2: Reinstatement factor analysis with meaningful indicators

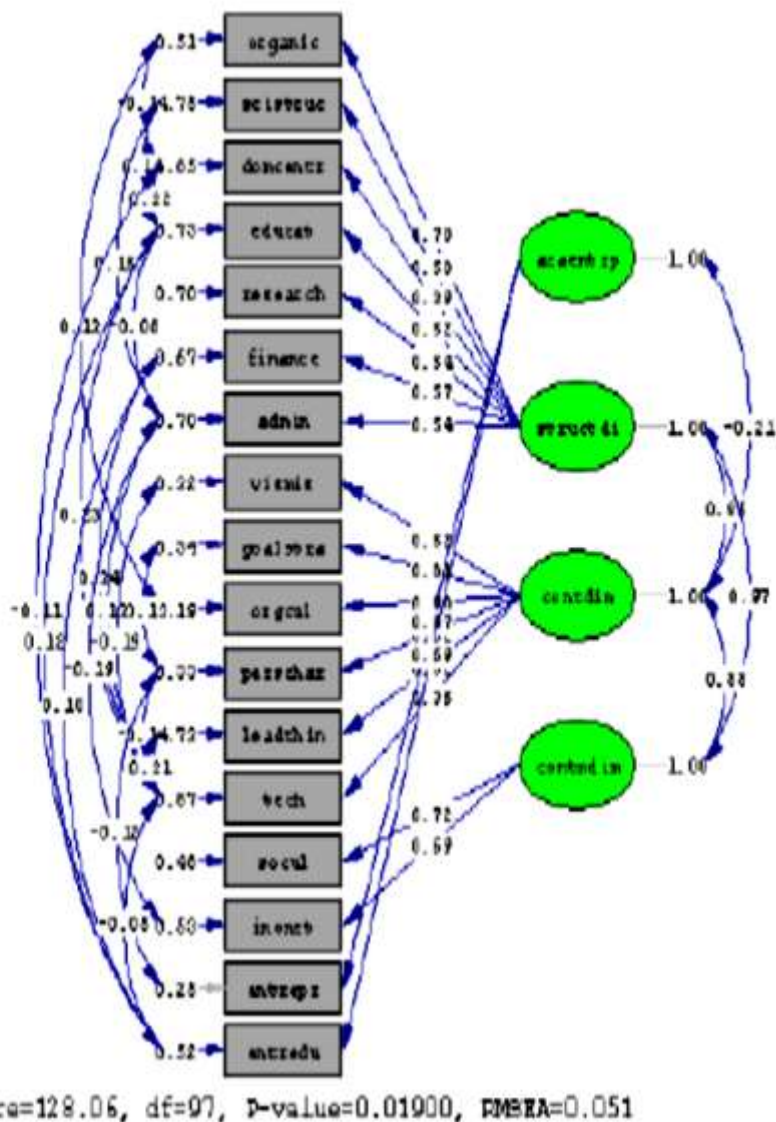
| Result | sig | t | Standardized value | estimate | Variable title |
|------------------------|-----|-------|--------------------|----------|----------------------------|
| Effective confirmation | /01 | 6/26 | /56 | /56 | Scientific structure |
| Effective confirmation | /05 | 4/60 | /43 | /43 | The scope of the territory |
| Effective confirmation | /01 | 6/32 | /56 | /56 | Educational Affairs |
| Effective confirmation | /01 | 5/79 | /52 | /52 | Investigative Affairs |
| Effective confirmation | /01 | 6/13 | /55 | /55 | financial department |
| Effective confirmation | /01 | 5/91 | /53 | /53 | Administrative Affairs |
| Effective confirmation | /01 | 10/78 | /82 | /66 | Vision and mission |

| | | | | | |
|------------------------|-----|-------|-----|-----|------------------------|
| Effective confirmation | /01 | 10/19 | /79 | /56 | Goals and strategy |
| Effective confirmation | /01 | 13/08 | /92 | /72 | Organizational Culture |
| Effective confirmation | /01 | 10/45 | /80 | /51 | Individual attribute |
| Effective confirmation | /05 | 3/62 | /33 | /33 | Technology |
| Effective confirmation | /01 | 8/39 | /74 | /74 | Sociocultural |
| Effective confirmation | /01 | 7/56 | /67 | /47 | New networks |
| Effective confirmation | /01 | 11/63 | /87 | /87 | Entrepreneurship |
| Effective confirmation | /01 | 8/17 | /71 | 40 | AE training |



Research Article

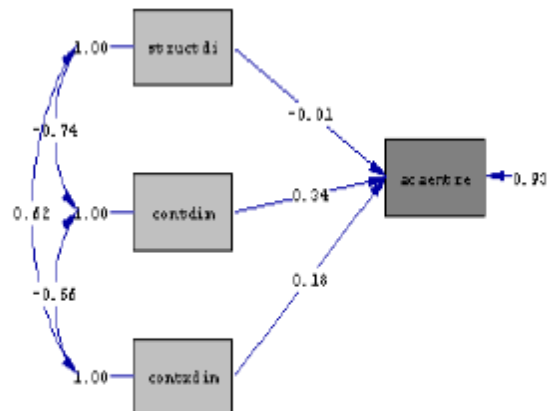
Finally, after the corrections of the multi-stage TFA model, considering the successive suggestions of the LISREL software and applying theoretical considerations in these amendments



Path analysis

With regard to the results of the verification and confirmation of the indicators used to measure the structural, content and background dimensions, the approved indicators were combined to form the scores of the indicators, the related dimensions were combined.

The results of path analysis on the aforementioned dimensions are shown in Fig. 15 and Table 16.



Chi-Square=0.00, df=0, P-value=1.00000, RMSEA=0.000

| results | sig | T value | Standard error | Standard value | estimate | relationship |
|---------------|-----|---------|----------------|----------------|----------|---|
| Not confirmed | /05 | -.051 | /029 | -.01 | -.0015 | Structural factors with academic entrepreneurship |
| confirmed | /05 | 2/36 | /032 | /34 | /075 | Content factors with academic entrepreneurship |
| Not confirmed | /05 | 1/47 | /077 | /187 | /11 | Underlying factors with academic entrepreneurship |

the only relation between content dimension and academic entrepreneurship is significant ($0.5 > t > 2, p$) and the relationships between the structural dimension and the underlying dimension, do not show significant. Regarding the path analysis values, the structural equation can be used to describe the factors affecting academic entrepreneurship as follows.

Underlying dimension $0.75 +$ Content dimension $0.11 +$ Structural dimension $0.015 =$ Academic entrepreneurship

Also, the results of the LISREL analysis show that the observed covariance matrix has a perfect fit with the predicted values and the saturated model is the result of which can be seen in the following analysis calculated by Laserl .

Goodness fit statistics

Degree of Freedom=0

Minimum fit Function chi_square=1/00= $p=1/00$)

Normal Theory Weighted Squares chi-Square=0/00($p=1/00$)

Academic Entrepreneurship Status at Payam Noor University Khorasan Razavi

Considering that this work was carried out for the first time at Payam Noor University of Khorasan Razavi and there was no history of this, and on the other hand there was no specific standard for university entrepreneurship at Payam Noor University of Khorasan Razavi (or other universities). The obtained scores were calculated using non-parametric Kruskal-Wallis test. The average rank and rank of 30 units and center were calculated using SPSS software. Results were presented in the form of tables and graphs below.

Research Article

Table 4: Academic Entrepreneurship Ranking in Provinces

| Ranks | | | | |
|-----------|-----|-----------|--------|----|
| ostan | N | Mean Rank | Rank | |
| acaentrop | 1 | 6 | 41.50 | 18 |
| | 2 | 7 | 93.00 | 8 |
| | 3 | 4 | 72.50 | 12 |
| | 4 | 7 | 61.00 | 14 |
| | 6 | 2 | 100.50 | 6 |
| | 7 | 5 | 119.00 | 2 |
| | 8 | 2 | 5.50 | 24 |
| | 9 | 9 | 25.00 | 21 |
| | 10 | 9 | 49.00 | 17 |
| | 11 | 9 | 112.00 | 3 |
| | 12 | 1 | 54.00 | 16 |
| | 13 | 3 | 56.00 | 15 |
| | 15 | 1 | 122.00 | 1 |
| | 16 | 9 | 85.00 | 9 |
| | 18 | 1 | 77.50 | 10 |
| | 19 | 5 | 77.50 | 11 |
| | 21 | 6 | 67.50 | 13 |
| | 23 | 2 | 7.50 | 23 |
| | 24 | 2 | 102.50 | 5 |
| | 25 | 3 | 37.00 | 19 |
| | 26 | 4 | 2.50 | 25 |
| | 27 | 12 | 14.50 | 22 |
| | 28 | 6 | 32.50 | 20 |
| | 29 | 3 | 98.00 | 7 |
| | 30 | 4 | 105.50 | 4 |
| Total | 122 | | | |

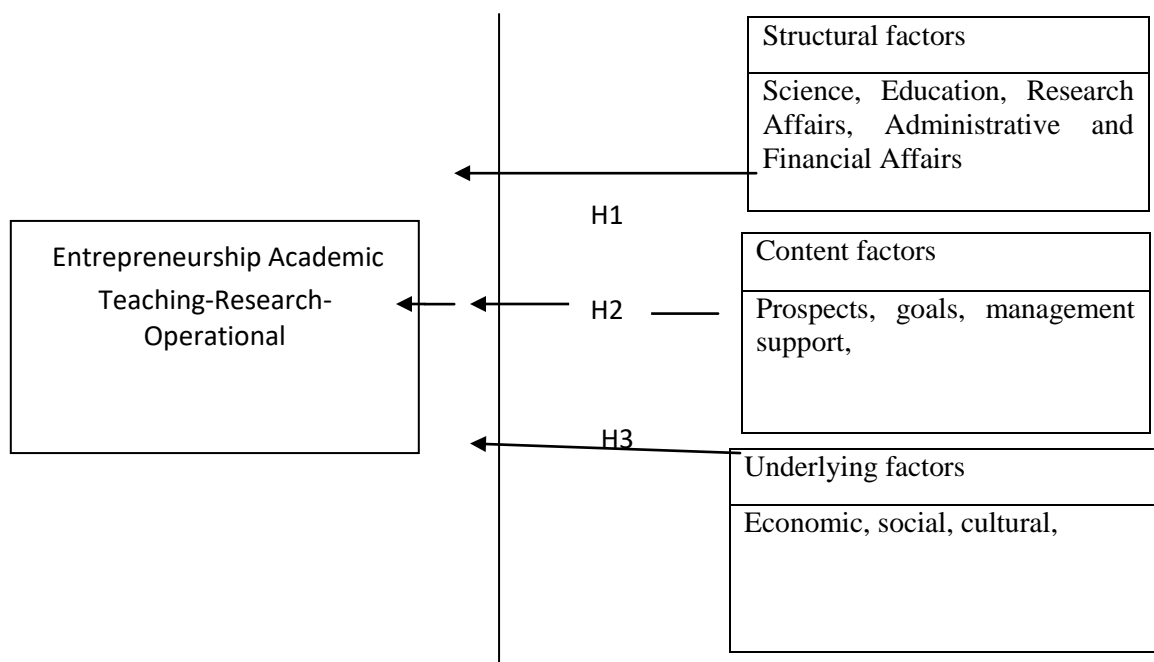
| Group | Result | Indicator | Rank mean | Centers | Rank |
|--------|--------------------|----------------|-----------|------------|------|
| First | Very strong / high | $x > 100$ | 122 | Mashhad | 1 |
| | | | 119 | Torbat | 2 |
| | | | 112 | neyshabour | 3 |
| | | | 105/5 | Freeman | 4 |
| | | | 102/5 | Kashmar | 5 |
| | | | 100/5 | Gonabad | 6 |
| Second | | $75 < x < 100$ | 98 | Sabzevar | 7 |
| | | | 93 | Chenarran | 8 |

Research Article

| | | | | | |
|--------|---------------|---------------|---------------------------------|--|----------------------------|
| | | | 85 77/5 77/5 | Taibad Quchan Khaf | 9 10 11 |
| Third | Strong / high | $50 < x < 75$ | 72/5 67/5 61 56 54 | Torbat Sarakhs Bajestan Taibad Dragas | 12 13 14 15 16 |
| Fourth | medium | $25 < x < 50$ | 49 41/5 37 32/5 | Roshkhar Mahvelat Joghatay BaKharz | 17 18 19 20 |
| Fifth | Weak / down | $x < 25$ | 25 14/5 7/5 5/5 2/5 | Firozeh Davarzan Kallat Dogharoon Sarvelayeh | 21 22 23 24 25 |

6. Discussion and conclusion

As outlined above, based on scientific resources, the research model was designed in which the three factors of contextual and field structure and university entrepreneurship with three dimensions of entrepreneurship, research and education are related. The designed model of the research is presented below.



Research Article

REFERENCES

- Antoncic, Bostjan and Hisrich and Robert D (2003).** Clarifying the intrapreneurship concept. *Journal of Small Business and Enterprise Development* **10**(1) 7-24.
- Aussman AM (1998)** .University and Entrepreneurship Development. Academy of Business and Administrative science, Budapest, Hungary.
- Baldwin Fred D (2000).** Tools For Entrepreneurship. *Appachia* **33** 3
- Bart C (2006).** Products strategy and formal structure in Entrepreneurship. *Strategic Management Journal* **7** 4.
- Blenker P, Dreisler P, Fargemann H M and Kjeldsen J (2004).** Entrepreneurship Educational university context. *Arthur school of Business, Denmark*.
- Block Zs and Stump S (1992).** Entrepreneurship education_ research: experience and challenge" , in D.Sexton & J. Kasarda (eds) the state of the art of Entrepreneurship boston: pws-kent
- Brinkmann Hans (2006).** How to Be an Entrepreneurial university. *Journal of Entrepreneurship Research*, **1**(1) 11-31
- Chambers Barry (2002).** The American Bulgaria university ASA Entrepreneurial University" High Education in Europe **26**(2).
- Chiesa V and A Piccaluga (2000).** Exploitation and diffusion of public research: the case of academic spin-off companies in Italy, *R&D Management* **30**(4), 329-339.
- Chrisman J J T Hynes and S Fraser (1995).** Faculty entrepreneurship and
- Chugh H (2010).** New academic venture development: exploring the influence of the technology transfer office on university spinouts. Working paper, Tanaka business school, Imperial college London.
- Clark Burton R (1998).** Entrepreneurship Education in higher Education in England: A Survey, London Business School.
- Clark, Burton. R (1998).** The Entrepreneurial University Demand and Response. *Tertiary Education Management* **4**(1).
- Clark Burton R (1998 a).** Creating Entrepreneurial University: Organizational
- Cliatt, katherine H (2001).** Effective course Design and Assessment for Entrepreneurship. *Business Education Forum*, **55**(3).
- Collins O and Moor D (1970).** The organization makers: A behavioral study of independent entrepreneurs, Englewood cliffs, N.J. Prentice-Hall.
- Covin J, and Slevin D (1996).** A conceptual Model of Entrepreneurship as Firm Behavior. *Entrepreneurship Theory and Practice*, **16**.
- econo,ic development : the case if the university of Calgary. *Journal of Business Venturing* **10**(4), 267-281.
- Etzkowitz H (1998).** The norms of entrepreneurial science: Cognitive effects of the new university-industry linkages, *Research Policy* **27**(8) 823-833.
- Etzkowitz, Henry, Patrick A splund and Niklas Nordman (2001).** Beyond Humboldt: Emergence of Academic EntrepreneurshipIn the U.S. and Sweden, CERUM, Working paper.
- Pathways of university Transformation, IAU and Elsevier science [PERGAMON].