




Research Paper

Factors Related to Innovative University

Shiva Javanmardi^{*1}, Abbas Abbaspour²

1. Corresponding Author: PhD, Department of Educational Management and Planning, Allameh Tabataba'i University, Tehran, Iran. 
2. Professor, Department of Educational Management and Planning, Allameh Tabataba'i University, Tehran, Iran

Received: 2020-10-31

Accepted: 2021-06-21

Abstract

Aim: The purpose of this study was to identify and determine the relationships among the components and sub-components of innovative universities and finally to design an Innovative University Model. A survey approach was used as the research method and data were collected through a researcher-made. Our findings were analyzed in PLS software through structural equation modeling technique and then through first and second order confirmatory factor analysis. Based on the obtained results, individual, group and institutional components and sub-components affecting innovative universities were identified, and among individual, group and institutional factors affecting innovative universities, the individual factor had the highest impact on innovative universities. Furthermore, the main functions of an innovative university were identified as education, research, innovation and entrepreneurship. Among these, education had the greatest impact on innovative universities.

Keywords: *Innovative University, Innovation, Innovation Ecosystem, Science, Technology*

Introduction

To guarantee a sustainable growth in the currently turbulent environment and to adapt to the innovations and rapid growth of science and technology, universities must move towards innovation. This innovation should take place in structure, culture, vision, processes and outputs. The concept of an innovative university is still unclear to many elites, academics, and

administrators. The significant research gap in the field of innovative universities in Iran requires addressing this important issue. Universities are now expected to step out of the old traditional systems, which are not very useful and justifiable, and to move in the direction of the principle of innovation (Horn, 2018). The current situation of higher education puts more pressure on the leaders of colleges and universities to think differently about how to manage their institutions (Swanger, 2016). Key factors in creating innovation at the university include structure, stakeholders, external communications, and rules and regulations. If universities want to change and have the necessary flexibility in the face of environmental changes, they should act faster, and respond appropriately to environmental changes. Universities that intend to change need a culture that is receptive to change (Kouchaki & Mohammadi, 2013). In this research, innovative universities are examined from the perspective of three main functions: education, research, and innovation and entrepreneurship, and at three levels: individual, group and institutional. Therefore, this research has three main objectives: 1- Identifying the components and sub-components of an innovative university 2- Identifying the relationships among the components and sub-components of an innovative university 3- Designing an innovative university model.

Methodology

This study seeks to find answers to the following questions: 1. What are the components and sub-components of an innovative university in Iran? 2. What are the relationships among the components and sub-components of an innovative university? 3. What is a model for an innovative university? The components of the theoretical foundations and research background identified through a review of the literature were widely approved by relevant managers and experts via a questionnaire. The data collection tool in this study was a researcher-made questionnaire that included 165 items with a five-point Likert scale from very high to very low role. The collected questionnaires were analyzed in PLS software using confirmatory factor analysis and structural equation modeling. The statistical population of the study includes all managers and faculty members of four universities: Tehran University, Shahid Beheshti University, Allameh Tabatabai University and Amirkabir University. Samples were selected by stratified random sampling. Questionnaires were distributed both in paper and in electronic form. Statistical analysis included descriptive and inferential statistics. Inferential statistics such as confirmatory factor analysis and structural equations were used. The findings were analyzed in PLS software through structural equation modeling technique and then first and second order confirmatory factor analysis.

Results

The components and sub-components of innovative universities were identified and the relationships among these components and sub-components were determined according to the model in Figure 1, and finally the Innovative University Model was designed. In this model, innovative universities were examined in three main dimensions: individual, group and institutional. Each dimension was examined for three main functions of an innovative university, namely education, research, and innovation and entrepreneurship. Each of the components of education, research, and innovation and entrepreneurship includes certain sub-components (Figure-1). Finally, each of the main sub-components includes other sub-components.

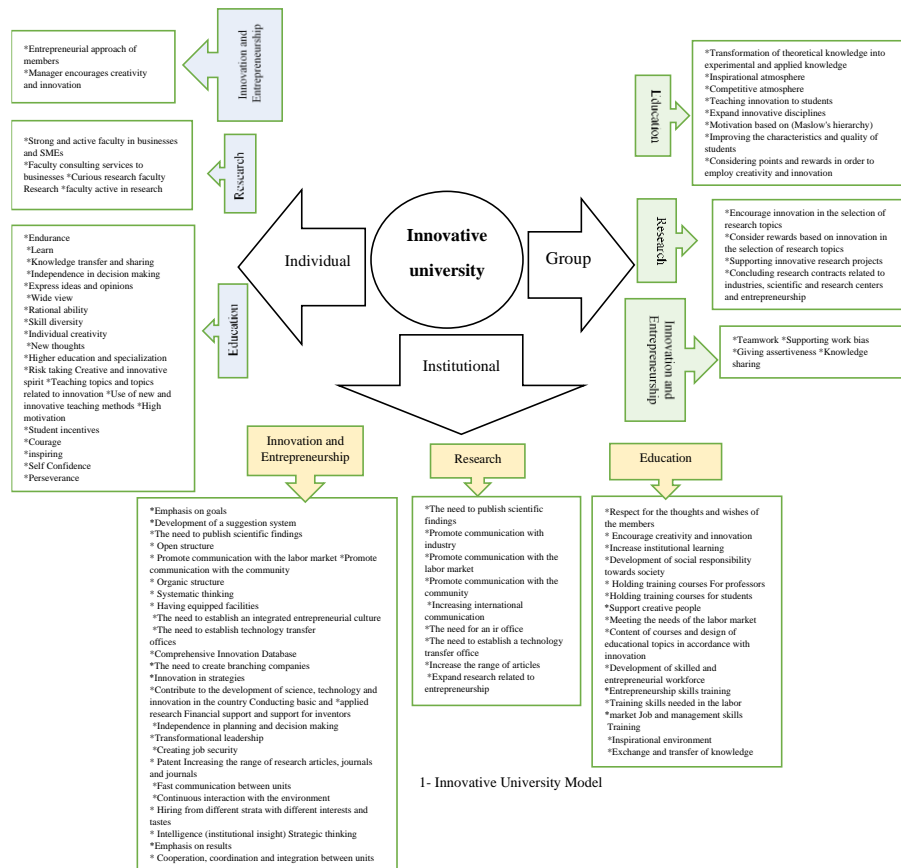


Fig. 1. Innovative University Model

Therefore, individual dimension and the component of education had the highest impact on innovative universities.

Discussion and conclusion

According to findings, individual dimension and the component of education had the highest impact on innovative universities. Also, the results of this study are consistent with the research of Kouchaki and Mohammadi (2014), which evaluated the prevalence of key factors of innovative universities from the perspective of students in terms of confirming the impact of factors such as structure, stakeholders, rules and regulations and external relations on innovation. Also, the findings of this study are in line with Swanger (2016), who examined the positive impact of leadership on the development of innovation and the positive impact of transformational leadership as one of the main factors in creating change and innovation in an innovative university. Numerous factors affect the development of an innovative university. The new approach of universities to educational issues is a feature of an innovative university. Also, the provision of appropriate social, cultural, political and educational infrastructure is effective in the formation of innovation in society and, consequently, the formation of an innovative university. University's independence in decision making and to some extent their financial independence are significant issues, as well. It is suggested that students and scientific elites use innovative, up-to-date and practical topics in their research, and that more extensive research be done on the innovative university.

Reference

- Horn. M. (2018). *How Universities Should Manage Innovation*. Forbes: <https://www.forbes.com/sites/michaelhorn/2018/04/03/how-universities-should-manage-innovation/?sh=3b3381517c4b>
- Kauchak, L., & Mohammadi, M. (2013). Assessing the prevalence of key factors in Innovative University from the perspective of students: A case study of Shiraz University. *Challenge and Solutions Management Conference* (Text in Persian).
- Swangard. (2016). *Innovation in Higher Education: Can Colleges Really Change?* <https://www.fmcc.edu>.



This article is an open-access article distributed under the terms and conditions of the Creative Commons AttributionNoncommercial 4.0 International (CC BY-NC-ND 4.0) (<https://creativecommons.org/licenses/by-nc-nd/4.0>)